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ABSTRACT

A study examined both the structure and the content of picture book interactions of 30 mothers with their 12-, 15-, or 18-month-old children. Interactions were videotaped in a laboratory playroom. Among the factors observed were the nature of the two partners' contributions as a function of the child's age, and the extent to which the mother gave information versus information requested by the child. The results were interpreted both in terms of L. S. Vygotsky's scaffolding construct and as revealing a general maternal orientation to elicit the maximum performance of which the child is capable. Structural aspects of the interaction were relatively constant over the age range studied: for all three age groups, the mothers controlled the interactions, taking responsibility for determining which of the pictures would be discussed. The content of the interactions varied as a function of the child's age; more active participation was demanded of older children, who were asked more questions by their mothers and who received more complex information. For all age groups, maternal questioning was related to the mother's beliefs about her child's word knowledge; she was more likely to ask the child to label a picture if she thought the child knew the label. (Several forms of maternal support for the child's performance, including feedback, are discussed.) (HTH)

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CENTER FOR THE STUDY OF READING

Technical Report No. 353

JOINT PICTUREBOOK INTERACTIONS OF MOTHERS AND ONE-YEAR-OLD CHILDREN

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Abstract

One of the most common forms of interaction between parents and young children is picturebook reading. This study examined both the structure and content of picturebook interactions of 30 mothers and their 12-, 15-, or 18-month-old infants. Structural aspects of the interaction were relatively constant over the age range studied: For all three age groups, the mothers controlled the interactions, taking responsibility for determining which of the pictures would be talked about. The content of the interactions varied as a function of the age of the child. More active participation was demanded of older children: They were asked more questions by their mothers, and the information provided to them was more complex. For all age groups, maternal questioning was related to the mother's beliefs about her child's word knowledge; the mother was more likely to ask the child to label a picture if she thought the child knew that label. The results are interpreted in terms of the scaffolding construct and as revealing a general maternal orientation to elicit the maximum performance of which the child is capable. Several forms of maternal support for the child's performance are discussed.

Joint Picturebook Interactions of Mothers and One-Year-Old Children

Picturebook reading is an especially common form of interaction between parents and young children. A substantial portion of mother-child play involves picturebook interactions (e.g., Dunn & Wooding, 1977), and the bedtime story is a tradition in many families. Joint reading is a frequent activity among both middle-class and lower SES families (McCormick & Mason, 1983; Snow & Ninio, unpublished manuscript). This particular form of joint cognitive activity is so ubiquitous in the lives of young children in this culture that our understanding of the social context of early cognitive development would be incomplete without examining it.

We have singled out picturebook interactions for attention not just because they are so common, but also because of their peculiarly didactic nature. Parents use picturebooks as a mechanism for the transmission of cultural information to their children; indeed, the most common occasion for explicit maternal tutoring in the home is during picturebook reading (Dunn & Wooding, 1977). We should emphasize that with very young children, little actual reading of text occurs in picturebook interactions. Most books for infants have little or no text, and parents tend to ignore whatever text there is (Snow & Ninio,

unpublished manuscript) in favor of simply labelling or talking about the pictures.

What is taught and learned in these interactions? First, picturebooks provide infants' earliest experiences with representational media and decontextualized information. Infants must learn not to chew on or manipulate their books, but rather to treat pictures as "objects of contemplation" (Werner & Kaplan, 1963). These interactions also provide infants' initial encounters with the nature and conventions of literacy, from the fact that books are to be held upright and pages turned in a certain order to the function of print (Anderson, Teale, & Estrada, 1980; DeLoache & Chambers, 1986; McCormick & Mason, 1983; Snow, 1983; Snow & Ninio, unpublished manuscript; Teale, 1982). In addition, joint picturebook reading has been described as a vocabulary acquisition device (Ninio, 1980) in which parents teach the names of things. More maternal labelling took place while looking at picturebooks than during any other activity for a mother and infant that Ninio and Bruner (1978) observed over several months. Besides learning the conventional labels for familiar things, young children are introduced to a host of objects and events they have never experienced directly (such as dinosaurs, whales, spaceships, and elves). Finally, many claims have been made, both in the popular (Trelease, 1982) and professional literature, that the experience of being read to at an early age facilitates later reading (Briggs & Elkind, 1973;

Clark, 1976; Durkin, 1966, 1978; Moon & Wells, 1979; Walker & Kuerbitz, 1979).

Several of the special features of picturebook reading are well suited to its didactic function. Because a book narrows the range of possible referents, a parent can establish, monitor, and maintain a joint focus of attention with a distractible infant: When an adult and young child are looking at a simple picturebook together, the adult can be confident that the child will correctly interpret the referent of the adult's comments. Also, specific interactive routines get established and recur frequently in picturebook interactions (Ninio & Bruner, 1978; Snow & Goldfield, 1983), thus providing the young child with a clear and familiar role to play in the interaction. Examples of such routines include the mother's asking the child to point to named objects, to say the name of an object to which she is pointing, to say the sound that a given object or animal makes, and so forth.

Given the prevalence of picturebook reading, one might expect to find a large body of relevant research. However, very few studies of this form of parent-child interaction have been done, and there are several limitations to the existing research. The most notable is the fact that a substantial portion of the published research in this area is based on only two mother-child dyads, one studied by Ninio and Bruner (1978) and the other by Snow and Goldfield (1982, 1983). This work has provided some

very interesting results, but the findings need to be substantiated with a larger sample of mother-child pairs. Second, only two studies (Murphy, 1978; Ninio & Bruner, 1978) have focused on the period during which picturebook interactions typically begin in earnest (around the child's first birthday--DeLoache, 1985); and, as mentioned above, one of these involved only one mother-infant pair. Furthermore, none of the research has systematically investigated both the structure and content of picturebook interactions.

The present study was designed to provide a detailed description of the structure and content of picturebook interactions in a fairly large sample of mother-infant dyads. Because we were interested in the nature of very early picturebook interactions, we studied a sample of dyads in which the infants were between 12 and 18 months of age. The mother-infant pairs interacted with a book of the sort typically used with very young children, an extremely simple picturebook with no text.

The conceptual basis for this study is Vygotsky's (1978) view of the social origins of cognitive skills. In many adult-child interactions, the more competent adult provides scaffolding (Wood, Bruner, & Ross, 1976) or other-regulation (Wertsch, McNamee, McLane, & Budwig, 1980) to support the less competent child's performance (Rogoff & Lave, 1984; Zukow, Reilly, & Greenfield, 1982). The less knowledgeable the adult believes the

child is with respect to the task, the more support or regulation the adult provides. Thus, the extent to which the adult takes responsibility for organizing the joint activity depends, among other things, on the age of the child, the difficulty of the task, and the amount of experience the child has with the task.

Based on the scaffolding concept, one might expect that in very early picturebook interactions, the mother would initially participate more actively than the infant would, she would take the primary responsibility for organizing and regulating the interaction, and she would provide support for the child's participation. We developed a coding system that would enable us to examine all these aspects of picturebook interactions.

We first sought baseline information on the level of participation of the two partners in early picturebook interactions to see if (as expected) and to what extent the mother is the dominant partner in the interaction. The two previous studies done with the target age group are of limited use for this purpose. Murphy (1978) was primarily interested in nonverbal behavior, and the criterion that Ninio and Bruner (1978) applied to turn taking for their mother-infant dyad was very loose--simply paying attention was counted as a turn on the part of the child. We expected that the mother would contribute more than the infant, based both on the scaffolding idea and on previous research with somewhat older children showing that

mothers generally play a more active role in picturebook interactions (Ninio, 1980).

Second, we wanted to examine the nature of the two partners' contributions to the interaction, especially to see how their behavior differed as a function of the child's age. One question was whether mothers of older infants would cede control of the interaction to them, a pattern that has been reported in some previous studies (Adams & Bullock, 1983; Murphy, 1978; Pellegrini, Brody, & Sigel, unpublished paper).

In addition, we were particularly interested in how the mother would regulate the exchange of information about the book. For any given picture, the mother could tell her infant something about the picture or she could ask the child to tell her about it. We wanted to know to what extent the mother gave versus asked for information, and we wanted to examine the basis for her decision to do one versus the other.

From a scaffolding view, we would predict that the mother's decision should be related to her beliefs about her child's knowledge: The mother should be more likely to ask her infant for information if she thinks there is some chance that the child possesses the relevant information than if she has no reason for such a belief. There is some evidence to support this prediction. For example, Murphy (1978) found that with younger children, the mother was more likely to give information, in particular, to label the pictured objects; whereas with older

children, she increasingly often questioned the child about the pictures (e.g., asking the child to label a picture). Similarly, Ninio (1983) reported that the mother's behavior depended on the child's prior behavior during the observation session: If the child had previously given an incorrect label for a picture, the mother was more likely to label it the next time; but if the child had previously produced a correct label, she was more likely to ask the child to name the picture.

In the present study, we sought a more direct assessment of this relation. We obtained from each mother judgments of her child's knowledge of the names of the objects pictured in the book, and we related these judgments to whether the mother labelled the picture or asked the child to tell her its label.

The final focus of the present study was to investigate the specific content of the mother's input. When the mother told the child something about the pictures, did the nature or complexity of the information she provided vary as a function of the age of the child? None of the existing research has evaluated differences in the level of what mothers choose to talk about with children of different ages. In addition, we wanted to examine and characterize the nature of the support provided by mothers for their infants' participation in picturebook interactions.

In summary, the goals of the study included: (a) providing descriptive data on joint mother-infant picturebook reading; (b)

analyzing the structure of the interaction; (c) categorizing the specific content of the information exchanges; (d) relating the mother's behavior to her perception of her infant's knowledge; and (e) examining the various forms of support provided by the mother for the child's participation.

Method

Subjects

The subjects were 30 pairs of middle-class mothers and their infants. They were divided into three age groups--12, 15, and 18 months old (± 2 weeks) infants, with 5 male and 5 female infants in each group. The infants' names were obtained from files of newspaper birth announcements, and 89% of the parents contacted by telephone agreed to participate. The subjects represented a wide range of income within the targeted middle-class population. All but one pair were white. Two additional pairs had to be eliminated, because the infants were uncooperative.

Procedure

The observation session took place in a laboratory playroom. Upon arrival, the mother was told that the focus of the study was mother-infant interaction as it normally occurs in two very common situations, playing and looking at picture books.

Play session. A 5-minute joint play session allowed the infant and mother to adapt to the setting, and it provided experience with a set of toys that were depicted in the picturebook the pair would later read. We were interested in the

extent to which the mothers might refer to a real object when discussing a picture of a similar object. The toy set included a ball, stuffed dog, plastic elephant, giraffe puppet, rubber pig, toy train, and a xylophone and mallet, all of which corresponded to pictures in the book, as well as several other toys. After 5 minutes, the experimenter returned to the experimental room and arranged the toys on shelves so they were out of the infant's reach but directly in view during the reading session.

Reading session. The mother sat in an armchair with her infant. One video camera behind a one-way mirror filmed a front view of the mother-infant dyad, and a second camera inside the experimental room was focused on the book in order to record pointing by the mother and the infant. The mother was instructed to go through the book in the same way she would if she and her child were at home together. The experimenter then left the room. The session ended after the pair had gone through the book at least once.

The book was a standard alphabet book (My ABC Book, Grosset & Dunlap, 1977) on heavy cardboard paper with one picture (usually of the single relevant object) corresponding to each letter of the alphabet (A - apple, B - ball, . . . Z - zebra).[1] There were two pictures per page, so four pictures were visible at a time.

At the end of the session, the mother completed a randomly ordered vocabulary checklist of 26 words corresponding to the

pictures in the ABC book: The mother indicated whether she thought her child could produce ("child spontaneously says the word"), could comprehend only ("child understands but does not say"), or was unfamiliar with ("child does not know") each of the words. The word knowledge checklist was given at the end of the session, because we did not want the mother's behavior during the book reading to be influenced by having considered her child's vocabulary. This choice created the reciprocal problem that the mother's estimate of her child's word knowledge might be influenced by what the child had done during the session. However, the incidence of intelligible infant verbalizations was so low in this study that few of the mothers' judgments could have been based on the child's performance in the session.

The audio tapes of the picturebook reading sessions were transcribed and the transcripts were verified and corrected by an observer looking at the videotapes. At the same time, nonverbal behaviors were recorded on the transcripts, and the transcripts were then coded.

Coding System

Units. The unit codes were intended to get at the amount and kind of information transmitted in the picture book interaction.

Verbal units were utterances that conveyed a single idea or piece of information. For a child's verbalization to be counted as a verbal unit, it had to be intelligible; that

is, the observer/scorer could understand it and/or the mother responded to it as intelligible to her. The mother's verbal units were classified according to four broad content categories. (Child verbal units were not classified further, because there were relatively few intelligible utterances.)

Orientation: The mother's utterance was aimed at focusing and maintaining the child's attention ("Oh, look!" "Here's a nice picture to look at") or at controlling the child's behavior ("Can you turn the page" "Look at the book").

Information giving (telling): The mother provided some information about the pictures, either (a) Simple Information--labelling a pictured object, imitating the sound of a pictured animal or vehicle, or naming letters; or (b) Elaborations--giving additional relevant information, which included commenting on an object's attributes or functions ("People live in houses"), relating an object to the child's own experience ("Jelly--you had jelly on your toast this morning"), dramatizing something about an object (pretending to pick up and eat the pictured apple), initiating a conversation inspired by the picture, and so forth.

Information asking (questioning): The mother requested or demanded a response from the child ("What's this?" pointing to a pictured object; "Where's the dog?", "What does the frog say?" "Can you say kitty?"

Feedback: The mother reacted to the child's behavior or verbalization (spontaneous or elicited) to indicate that he was right or wrong. Positive feedback included the mother's confirming the child's response by explicit confirmation ("That's right."), echoing the child's utterance with a falling tone, praising the child ("Good girl!"). Negative feedback involved the mother's indication that a child's response was unacceptable by either explicitly negating it ("No, it's not a cow") or by a variety of more indirect rejections ("Are you sure?" "That's a wheel." after the child had pointed to the wheel when the mother had asked him to point to the train). A third type of feedback category occurred when the mother answered her own question after the child failed to respond or responded incorrectly.

Nonverbal units included:

Pointing at pictures in the book. (Infant actions such as banging on the book or pointing at irrelevant objects in the room were excluded.)

Infant vocalizations that reflected participation, but

that the coder could not understand and the mother did not respond to as intelligible.

Turns. A turn included all verbalizing and pointing relevant to a given topic by one person before either (a) that person changed the topic, or (b) the other person said something about the same or a different topic.

Verbal turns: A child's turn was considered verbal if it included one or more verbal units (i.e., intelligible verbalizations), regardless of whether or not the utterance was accompanied by pointing.

Nonverbal turns: Nonverbal turns consisted of one or more nonverbal units (points) not accompanied by an intelligible verbalization. (Although it was possible for the mothers to have purely nonverbal turns, they never did: All maternal turns were verbal.)

Episodes. An episode consisted of one or more turns related to a given object or topic (almost always a picture in the book). For example, everything that was said about the "apple" constituted an episode. When the pair went on to "ball," a new episode began.

To assess reliability, a second scorer independently coded a random sample of a third (10) of the protocols. Reliability scores (number of agreements divided by the number of agreements plus disagreements) for all of the above categories were 90% or above. All disagreements were discussed and an agreement reached.

Results

Unless otherwise specified, all analyses reported were 3(age) x 2(sex) between-Ss ANOVAs. References to age differences always reflect significant main effects for age.

Baseline measures. Preliminary analyses were conducted to determine if the age groups differed in overall level of activity. As Table 1 shows, no main effects or interactions were significant for the (a) total number of pictures focused on by the pair, (b) total number of episodes, or (c) maternal verbal units (all F's < 1.0). These analyses thus indicate that the three age groups were equivalently active and that the children in the three groups were exposed to approximately the same amount of maternal input during the picturebook reading sessions. Hence, the following analyses are not confounded by age differences in overall level of activity.

Insert Table 1 about here.

Initiation of episodes. The first set of analyses concerned the relative control of the interaction through the initiation of episodes, that is, introducing a new topic of conversation by focusing on a new picture. As can be seen in Table 2, it was typically the mother who started new episodes, and her dominance in this regard was remarkably consistent across all three age groups.

Insert Table 2 about here.

Given that the mothers initiated most of the episodes, did they do so by telling or questioning the child about the picture? As can be seen in Table 2, the mother typically introduced a topic by telling the child about it; over 3/4 of all episodes were initiated by maternal information-giving. However, the predominance of information-giving differed as a function of the child's age: With the youngest children, the mothers almost always started an episode by telling the child something, whereas the mothers of the oldest group were equally likely to question the child. Thus, the older the child, the more likely he or she was to be asked to say or do something in the picturebook interaction. This age difference in questioning was significant, $F(2,24) = 5.77$, $p < .009$.

When children initiated episodes, they most often did so nonverbally, that is, they simply pointed at a picture (usually without saying anything intelligible). As Table 2 shows, all of the episode initiations by the youngest children and most of the initiations of the 15-month-olds were nonverbal. Thus, when the younger children determined what picture would be discussed next, they did so simply by pointing at it. The mothers interpreted these spontaneous points as requests for information; the child's nonverbal initiations were almost always followed by the mother

naming the object to which the child had pointed. The proportion of all episodes that were initiated by child verbalizations increased significantly with age, $F(2,24) = 8.39$, $p < .002$.

Participation in episodes. As Table 3 shows, the episodes were generally quite short and consisted of almost three times as many maternal as child turns. In most episodes, only the mother contributed: She either simply told the child something or asked the child a question but then answered it herself. In only a third (37%) of all episodes did the child take an active turn. The mother's dominance characterized all three age groups, as was also true for the initiation of episodes.

Both qualitative and quantitative differences occurred within the episodes as a function of the child's age. The child's input to the interaction became increasingly verbal. Although there was no difference with age in the total number of turns per episode, there was a significant increase with age in the number of verbal turns, $F(2,24) = 5.95$, $p < .008$. (Nonverbal turns decreased slightly, but nonsignificantly, with age.) This change was accompanied by an increase in the number of maternal turns per episode, $F(2,24) = 4.49$, $p < .03$, primarily reflecting the mother's consistent response to the increasing verbalizations from the child.

Maternal questioning. Differences as a function of the child's age were also apparent in the content of the mother's contribution. The relative proportion of questioning versus

telling that the mothers did within episodes paralleled the result for the initiation of episodes. Overall, the mother most often gave the child information, but the older the child, the more likely the mother was to question him or her. The proportion of all maternal units that involved telling or giving information to the child decreased with age, from 87% to 62% to 49%, $F(2,24) = 10.15$, $p < .0007$.

Maternal beliefs about child knowledge. To look in more detail at what governed the mothers' decisions about telling versus questioning, we examined how the mother's beliefs about her child's word knowledge were related to what she did. As one would expect, the mothers' responses to the word-knowledge checklist indicated increasing production and comprehension with age.[2]

One indication that the mother's regulation of the picturebook session was related to her beliefs about her child's word knowledge came from an analysis of which pictures were skipped over. The mother was more likely to focus on pictures she thought the child was familiar with and more likely to skip over pictures judged to be unfamiliar; every pair discussed the "dog," but many skipped the "queen" or the "vase." The main effect for child knowledge was significant in a 3(age) x 2(sex) x 3(child knowledge--says, understand, does not know) mixed ANOVA of the number of pictures skipped, $F(2,46) = 14.84$, $p < .00001$.

We next asked if the mother's perception of her child's word knowledge affected whether she gave or asked the child for information the first time each picture was discussed. For all age groups, the mother more often asked the child for labels she thought the child could produce (49%) than for words she believed the child had never said but comprehended only (18%) or was unfamiliar with (8%).

To analyze this difference statistically, three difference scores were computed for each subject. The number of words that the mother asked the child to label was subtracted from the number of words that she labelled herself for each of the three categories of child knowledge (Says, Understands but does not say, Does not know). A positive score meant the mother more frequently told the child the names of the pictures in that category, whereas a negative score indicated she more often asked the child for the labels. The mean difference scores for the three categories of child knowledge were -.26 for Says, 3.38 for Understands, and 7.82 for Does not know. The main effect for child knowledge was highly reliable in a 3(age) x 2(sex) x 3(word knowledge) ANOVA of the difference scores, $F(2,30) = 18.44$, $p < .00001$.[3] Thus, for all age groups, if the mother thought the child knew a word, she was more likely to ask him to label the corresponding picture.

Complexity of information given. Another difference in the behavior of the mothers in the three age groups concerned the

kind or level of information given. The information-giving category was broken down into simple information (labels, sounds, letter names) and elaborations (other information about the pictured objects, including factual information, dramatizations, references to the child's experience with related objects). The majority (74%) of information provided to the children consisted of simple information, primarily labels. Indeed, labels accounted for 60% of all information-giving units. However, more of the information received by the older children was complex than was true for the younger subjects. Elaborations increased from 12 to 23 to 42% of all information-giving units over the three age groups, $F(2,24) = 6.46$, $p < .006$.

Experiential references. One specific type of information-giving that was fairly common was for the mother to relate material from the picturebook to the child's own experience, either to the toys recently encountered in the lab or to the child's previous experience. Twenty-two of the 30 mothers at least once drew a parallel between the picturebook and the child's previous experience. Experiential references accounted for a greater proportion of the information-giving units of the mothers of older children than of younger children, $F(2,24) = 5.45$, $p < .02$. In addition, slightly over half (17) of the mothers pointed out the relation between some of the toys the child had just played with in the play session and the corresponding objects in the picturebook. Although the mother

was the dominant partner, she was highly responsive to her child's overtures. The mothers almost always responded to their children's contributions, whether spontaneous or elicited: 89% of the child's turns elicited some sort of comment or feedback from the mother. The children were less responsive to their mothers; they failed to respond to over half of the mothers' questions and requests. However, the mother often answered her own question immediately after asking it, suggesting she did not really expect the child to respond. The children were somewhat more likely with age to respond: 15, 37, and 46% of the mother's questions elicited a response from the three age groups, respectively. Interestingly, the majority (77%) of the child's responses in all age groups were correct.

Feedback. The feedback that the children received reflected this high level of correct responses. The majority (81%) of the feedback was positive (the mother confirmed, echoed, or praised the child's response). The overall amount of feedback increased as a function of age, and this was true for both positive and negative feedback. There was a significant age effect for the proportion of maternal units that involved positive feedback, $F(2,24) = 6.25$, $p < .007$, and a near significant result for negative feedback, $F(2,24) = 3.16$, $p < .07$. These age differences presumably were in part due to the increase in the level of verbal participation by the children: The children said

more and hence elicited both more positive and more negative maternal feedback.

Several aspects of the negative feedback that the children received deserve mention. First, the mothers always responded to incorrect responses by the child; they never ignored or accepted a child response that was not right. Second, the great majority (85%) of the negative feedback given to the children was indirect; the mother indicated to the child that his response was not acceptable without explicitly negating it. The incidence of explicit negation of the child's response was extremely low: only four subjects were ever told "No" or "That's not right." Third, all four of the subjects who received explicit negations were boys, resulting in a significant sex effect, $F(1,24) = 4.45$, $p < .05$.

Discussion

The primary goal of the present study was to provide a detailed description of both the structure and content of very early picturebook interactions of mothers and their infants. The data support a scaffolding view of picturebook interactions. The mother is competent and the child much less competent in this situation, and the mother erects a scaffolding to facilitate the participation of the child (Rogoff & Lave, 1984; Wertsch et al., 1980; Wood et al., 1976).

As one would expect from the scaffolding construct, the mother was very much the dominant partner. She almost always

determined what the topic of conversation would be (mothers initiated over 80% of all episodes), and she took two-thirds of the turns. The mother also influenced the nature of the child's contribution by either telling the child about the pictures or asking the child to tell her about them. In addition, as expected from scaffolding notions, the mothers placed greater demands on older children. The dominant role of the mother and her shift from telling to questioning replicate previously reported results (Murphy, 1978; Ninio, 1980).

Other evidence of increasing maternal demands that has not been reported previously concerns the level of information provided to the child. With older children, who were already familiar with some of the pictured objects, the mothers did not simply label them. Rather, they elaborated upon the pictures, telling the children something about them in addition to their names. The mothers' elaborations included pointing out some features of the pictured objects ("B is for ball; look at the pretty ball with the pretty colors") or giving relevant factual information ("And a xylophone. It makes music"). The mothers also started conversations or routines inspired by the pictures ("Indian goes 'whoo-whoo.' [singing] One little, two little, three little Indians"). The data thus suggest that with the youngest children, the picturebook serves primarily as a mechanism for teaching the names of things, but with somewhat

older children, it is used to introduce additional information to the child.

Some of our results differ from previous data on picturebook interactions in interesting ways. These discrepancies indicate that when characterizing picturebook interactions, one must take into account multiple variables, including not only the level of competence of the child and the level of difficulty of the book, but also changing relations between them. For example, one way in which our data differ from previous research concerns the behavior of the mothers with the youngest children. Snow, Arlman-Rupp, Hassing, Jobse, Joosten, & Vorster (1976) reported that mother's speech to young children was more complex during book reading than during play or other activities. In our sample, however, the mothers' speech, especially with the youngest children, was extremely simple--almost an exaggerated version of motherese. To a great extent, the mothers restricted themselves to just labelling the pictured objects. The predominance of simple naming was quite striking. For some mother-child pairs, for example, whole episodes consisted of single words or phrases. The following is everything that one mother of a 12-month-old said about the first three pictures in the book: "Look at the apple. Apple. Teddy bear. And kitty."

The pure naming that the mothers did with the youngest subjects may be a unique aspect of very early picturebook reading; it seems unlikely that such simplified conversations

occur in any other context. We would speculate that this simplified input is a joint function of the relatively non-verbal status of the children and the extremely simple picturebook used in this study--a book that was highly appropriate for this age group and typical of those in common use. As we noted earlier, picturebooks can establish a shared focus of attention. The mother can then simply point to and name a picture, and be reasonably confident that the child will understand the intent and content of her utterance, that is, that the child will understand that the word she says applies to the pictured object.

We suspect, then, that with a relatively nonverbal child and a very simple book, mothers' language in picturebook interactions is actually less complex than in everyday discourse; but with more advanced books and older, more linguistically competent children, mothers' speech is more complex than in ordinary conversation (as Snow et al., 1976 found). In both cases, the picturebook interaction may serve a didactic function, but the nature and content of the mother's input will vary markedly. With very young children, the picturebook serves primarily as a mechanism for vocabulary acquisition (Ninio, 1983), for learning the names of things. With somewhat older children, it may serve a more extensive teaching function.

A second way in which our results difier from others has to do with the mother's control of the picturebook interaction. Other investigators have reported that mothers cede control of

picturebook interactions to older children (Adams & Bullock, 1983; Murphy, 1978). There was no evidence of such a transfer of control in our study. Older children did not initiate any more topics or take more turns than did younger children. The mother's shift from telling to questioning had no effect on her control of the interaction: One can determine the topic of conversation just as easily by asking a question about a particular picture as by telling something about it. Thus, even though the older children had more verbal turns than did the younger ones, they exerted no more control of the interaction.

The mother's retention of control in the present study is probably due to the fact that even the oldest children in this sample were not very competent verbally. (Their mothers reported spontaneous production of only six of the 26 object names.) This makes the point that the extent to which the mother controls the interaction, as well as the extent to which she questions the child, will not be a simple linear function of age, as has been implied in some previous studies. Instead, they will depend on how a particular book fits with the child's current state of knowledge and linguistic ability. As long as a book is above the child's current level, we would expect the mother to be relatively more active and to engage in little questioning. Thus, an 18-month-old with a relatively advanced book might be asked fewer questions than a 15-month-old looking at a very simple book. Similarly, children may be more active and more

likely to introduce topics when looking at familiar books--Snow and Goldfield's (1983) subject especially liked to talk about pictures that had been discussed on previous occasions.

One of our goals in the present research was to identify examples of maternal support. One of the most important was the direct evidence we obtained that the mother's decision about telling versus questioning her child about a given picture depended on whether she thought her child knew that particular word. If the mother thought the child did not know the name of a pictured object, she labelled it herself. It was only labels that the mother thought the child knew that she asked him to produce. It is probably no coincidence that "where" questions (requests that the child point to a named object) were most common in the 15-month-olds--the group of subjects with a relatively large comprehension but small productive vocabulary.

The mothers in the present study provided several additional forms of support for their children's early interactions with books. Some maternal comments seemed to represent an effort to make the pictures in the book more understandable to the child. The mother drew parallels between the pictures and the child's own experience with real objects and events. Examples of such experiential references (one type of maternal elaboration) include relating the pictured object to something that the child owned ("Frog--You have a frog, a stuffed one"), mentioning the toys that the child had just played with in the play session

("Look at the xylophone--just like the one you were just making pretty music [with]"), and (rarely) referring to specific events that the child had experienced ("You had jelly this morning." "you've seen an elephant"). Snow and Ninio (in press) provide some similar examples.

Dramatization was another interesting type of elaboration. Several mothers pretended to eat the apple or the jelly, and one mother invited her daughter to "Take a bite of the apple." Other mothers animated the pictured animals, pretending the rabbit or frog was hopping across the page. In both the experiential references and dramatizations, the mother seemed to be trying to make contact between the decontextualized, representational material in the picturebook and the child's real-world experience.

Another maternal behavior that might be construed as support was the posing of rhetorical questions. The mother frequently used the question format, but then went ahead and provided the answer to the question without giving the child time to respond, suggesting that she never really expected the child to answer. This pseudo-dialogue format (Ninio & Bruner, 1978; Stern, 1977) may benefit the child by providing experience with the conventional question-answer format before he or she is capable of taking a role in it. This may be important, since there is evidence that experience with question-answer routines is related to school success (Heath, 1983).

The mother's avoidance of explicit negative feedback may also constitute a form of support by helping to make the interaction mutually satisfying. Although the mother always let her child know when a response was not fully correct, only four of 30 mothers ever used words like "no" or "not right." Instead, the mothers generally corrected their children indirectly--for example, by simply offering the correct answer in response to the child's error, by questioning the child's response without saying it was wrong ("Are you sure that's a dog?" "Does that look like a kite?"), or by stressing some positive aspect of the child's response while giving the correct answer ("It looks round like an apple, but it's a ball"). This avoidance of explicitly negative feedback is very different from the behavior of the mother observed by Ninio and Bruner (1978), suggesting that she had an atypical style of correcting her child.

The preference of the mothers in our study for indirectly cueing the children to the fact that they had responded incorrectly is reminiscent of Bridges' (1977) findings. In that study, mothers of two-year-olds preferred to give their children indirect clues to help them carry out an object identification task. The mothers avoided directly telling the children the answer and tried to guide them to produce the correct response themselves. They provided just enough support to enable the children to succeed, but not more.

The overall pattern of the mother's behavior in the present

study suggests the existence of a general orientation to picturebook interactions--a constant orientation that manifests itself in different behaviors with children of different ages. The mother appears to have the goal of eliciting the highest level of behavior from her child of which the child is capable. For the youngest children, with a minimal vocabulary, simply paying attention to the mother's labelling is an adequate contribution to the interaction. The older children, however, must do more. If the child knows the name of a picture or knows something else about it, the mother wants the child to contribute that information to the dialogue. Therefore, the mother solicits the child's input whenever she thinks the child can provide it. But, by the same token, the mother avoids asking for performance of which the infant is not capable. The mother structures the interaction, not only so the child performs at his or her highest level, but also so that the child does not fail. Should the child fail (that is, not produce the requested item of information), the mother works to help him or her reach the correct answer through hints (a la Bridges, 1977) and gentle, leading questioning. This general orientation may characterize other types of mother-infant interaction as well. However, picturebook interactions offer the mother an ideal context both for teaching her child new information and for eliciting performance of what the child already knows.

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Footnotes

[1]We also gave the mothers a second book, which had a very simple text about farm animals. However, this book was apparently too complex for the infants, because most of them refused to sit still to look at it. Therefore, only the data for the alphabet book were analyzed.

[2]The average number of words in each of the three categories for the 12-month-olds were: Child spontaneously says--.88, Child understands but does not say--4.20, and Child does not know--20.13. The comparable figures for the 15-month-olds were 2.40, 10.70, and 12.80; and for the 18-month-olds, 6.10, 7.60, and 12.30. The age differences for all three comparisons were significant, F's$(2,23) > 4.2$, p's $< .05$ or better. Word knowledge data were unavailable for one subject.

[3]The comparison of the difference scores could be conducted only for subjects who had at least one word in each category, so nine subjects (seven 12-month-olds and two 15-month-olds) whose mothers reported no words in the "child says" category were not included in the analysis.

Table 1

Baseline Measures Reflecting Overall Amount of Interaction

Age Group	Mean Number of Pictures Discussed	Mean Number of Episodes	Mean Number of Maternal Units
12-month-olds	17.8	22.6	36.7
15-month-olds	18.7	24.9	48.9
18-month-olds	15.7	20.0	42.1
Mean	17.4	22.5	42.6

Table 2

Proportion of Episodes Initiated by Mother and Child

	Mother			Child		
Age Group	Total	Information Giving	Information Asking	Total	Non-Verbal	Verbal
12-month-olds	.83	.94	.03[a]	.17	1.00	.00
15-month-olds	.78	.69	.31	.22	.71	.29
18-month-olds	.82	.53	.46	.17	.51	.49

[a]A few episodes were initiated by orienting statements, and hence the totals for Information Giving and Asking may not add up to 100%.

Table 3

Maternal and Child Contributions to Episodes

Age Group	Maternal Turns/ Episode	Child Turns/Episode		Total Turns/ Episode
		Verbal	Nonverbal	
12-month-olds	1.11	.08	.27	1.46
15-month-olds	1.20	.15	.30	1.65
18-month-olds	1.35	.41	.17	1.93